



**Maryland Department of Housing and Community Development
7800 Harkins Road, Lanham, Maryland 20706**

The Maryland Department of Housing and Community Development (DHCD) has established the following rehabilitation standards as the primary document for identifying and correcting sub-standard conditions in dwellings being rehabilitated with National Housing Trust and/or HOME funds.

**REHABILITATION STANDARDS
FOR DHCD MULTIFAMILY HOUSING PROGRAMS INCLUDING NHT AND
THE HOME PROGRAM**

“Rehabilitation” is defined as “the process of returning a property to a state of usefulness, through repair or upgrade, which makes possible an energy efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architectural and cultural values.”

The purpose of these standards is to establish minimum guidelines when the Department of Housing and Community Development (DHCD) undertakes a rehabilitation project funded in whole or part with NHT and/ or HOME (State or Federal) funds.

DHCD requires that all housing units and building exteriors receiving rehabilitation work be brought up to the Maryland Building Performance Standard (COMAR 05.02.07), or county codes whenever more restrictive, and meet minimum livability codes. All work must be performed within industry standards and be of acceptable quality. Upon completion of any project all major systems must have a remaining useful life of a minimum of twenty (20) years, if not; replacement of components will be required. Major systems include structural framing, roofing, cladding and weatherproofing (e.g., windows, doors, siding, gutters), plumbing, HVAC, electrical and elevators.

All materials used in connection with DHCD financed projects are to be new, above Builder Grade quality and without defects.

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I. GENERAL REQUIREMENTS

Working Hours

All work at the site, unless otherwise agreed upon as part of the Construction Contract, shall be performed during regular/business working hours. Regular/normal, or otherwise, working/business hours will be specified in the Construction Contract between the Owner(s) and the General Contractor.

Guaranties and Warranties

General Contractor shall guarantee the work performed for a period of one year from the date of Substantial Completion with a 2.5% of Construction Contract dollar volume Latent Defect Bond. Upon notification by the property owner and at the contractor's sole expense, the contractor will correct any and all defects due to unacceptable workmanship and/or materials and/or damages resulting thereby. Contractor shall furnish the property owner with Operation & Maintenance (O&M) Manuals minimally containing all manufacturers and supplier's written guarantees and warranties, as applicable, covering materials and equipment furnished under the construction contract.

Permits

The General Contractor must apply for and have issued all required grading or trade permits prior to the start of any work. Building permits are by Owner. Permits for specific trades must be obtained prior to the specific trade starting work. Contractor is responsible for securing all required permits unless otherwise stated in the scope of work.

Safety

The contractor will be responsible for all safety precautions and programs in connection with the work. The contractor must take all necessary precautions for the safety of, and provide all necessary protection to prevent damage, injury or loss to (i) residents, employees and other persons who may be affected; (ii) the work and all materials and equipment whether in storage on or off the site; and (iii) other property at or adjacent to the site, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not slated for removal, relocation or replacement during the course of construction. The contractor must comply with all applicable laws, ordinances, regulations and order of any public authority having jurisdiction for the safety and protection of persons or property. The contractor must establish and maintain all necessary safeguards for the duration of the contract. This shall include posting of signage and other warnings against hazards, disseminating safety regulations, and notifying the Owner and residents of the posting. Materials identified as toxic waste such

as, but not limited to, lead and asbestos, must be removed or remediated by companies licensed to do so.

Subcontractors

Subcontractors will be bound by the terms and conditions of the Construction Contract insofar as it applies to their work. The General Contractor is directly responsible to the owner for the proper completion of all work under the contract and shall not be released from this responsibility by any arrangement they may have with any subcontractor(s).

II. GENERAL SITE CONDITIONS AND EXTERIOR BUILDING CRITERIA (for specific information refer to Building Evaluation Report (BER) and/or Environmental Site Assessment (ESA))

SITE CRITERIA

Positive Drainage

All drainage on a site to drain away from building(s). Slope shall have a 6 inch drop within 10 feet. Drainage should be toward a street, alley, or easement, and be facilitated by elevation around structures or design to include the construction of swales.

Cleanup

At all times the premises must be kept in a clean and well-organized manner free from construction materials and waste. All debris, trash, waste and surplus materials including excess dirt, tree and shrubs, etc., must be removed from the job site and shall be disposed of by legal means by recycling where feasible, or, to a proper land fill. Remove any temporary containers or structures that are located on site and legally dispose of all debris resulting from construction activities. At a minimum, exterior spaces shall be yard raked and free of glass, nails and lead suspect paint chips.

Trees

Trees that are too close to the structure or threaten the structure shall be trimmed or removed. Otherwise, shade trees shall be preserved whenever possible.

Landscaping

Refer to contract documents for landscaping scope of work. Where soil is disturbed for installation of water and sewer, or to remove unneeded sidewalks or outbuildings, etc., plantings or grass seed and straw shall be provided to cover bare soil.

Paving and Walks

Deteriorated, cracked or unlevelled essential walkways, such as accessible route, will be removed and replaced. Non-essential paving such as unnecessary sidewalks will be removed and appropriately landscaped.

Any areas of failed paving to be removed and replaced under the supervision of Soils Technician. Paving to be milled and overlain or resurfaced as recommended in BER.

Soil Treatment

Play Areas: Bare soil play areas frequented by children under the age of six years shall be tested for arsenic, lead content. Any bare soil over 400 parts per million (ppm) of lead shall be covered with a reinforced landscape cloth and impermanent surface covering e.g. gravel, bark, sod, or artificial turf with no lead content. Loose impermanent covering such as bark or gravel shall be applied in a thickness of not less than 6 inches.

Other Bare Soil: Bare soil outside of play areas shall be tested for lead content. Bare soil over 1200 ppm of lead and totaling more than 6 square feet per property shall be covered with a reinforced landscape cloth or other impermanent surface covering, an interim control measure which prevents children access to the bare soil. Soil lead levels above 5000 ppm of lead require abatement of the soil. Abatement shall include removal and replacement of soil or covering with concrete or other permanent barrier considered to have a life span of 20 years or more.

Outbuildings

Repair Standard

Unsafe and blighted structures, including outbuildings, sheds, garages and barns, will be removed if it is not financially feasible to complete the repairs required to make them structurally sound and weatherized with lead hazards stabilized.

Replacement Standard

No replacement of outbuildings is allowed unless replacement is reviewed and approved by DHCD on a case by case basis.

Lifts

Lift requirements shall be determined based on mobility needs of proposed tenants. Manufacturer specifications and all necessary components to complete the project will be adhered to. All work will be performed within industry standards.

EXTERIOR BUILDING CRITERIA

Access

All access to residential structures must meet the local code requirements.

Exterior Paint

Repair Standard

All exterior paint shall be stabilized using lead-safe practices

Replacement Standard

Leaded components shall be replaced, encapsulated and/ or the paint removed to create a lead-free exterior using lead-safe practices and following all Maryland Historic Trust (MHT) and Local Preservation Office's requirements.

Exterior Cladding

Repair Standard

Siding and trim will be intact and weatherproof. All exterior wood components will have a minimum of two continuous coats of paint, and no exterior painted surface will have any peeling, flaking or deteriorated paint.

Replacement Standard: Minimum Useful Life: 10 Years

Historically sensitive vinyl siding over house wrap, or replacement of original materials with like kind materials and design, where cost-effective.

Exterior Porches

Repair Standard

Unsafe or unsightly porches will be repaired to conform closely to historically accurate porches in the neighborhood or with like kind material and design approved by the MHT. Porch repairs will be structurally sound, with smooth and even decking surfaces.

Replacement Standard: Minimum Useful Life: 10 Years

Deteriorated wood porches shall be rebuilt with preservative treated structural lumber and tongue and groove pine decks. Masonry elements shall be rebuilt with masonry.

Exterior Steps and Decks

Repair Standard

Steps, stairways, and porch decks will be structurally sound, reasonably level, and trip free with smooth, even surfaces.

Replacement Standard: Minimum Useful Life: 20 years

New steps and stairways shall be constructed of preservative treated lumber in conformance with local code, or of masonry. Porch decks shall be replaced with tongue and groove pine.

Exterior Railings

Repair Standard

Handrails will be present on one side of all interior and exterior steps or stairways with more than four risers, and guard railings are required around porches or platforms over 30 inches above ground level. Railing repairs will be historically sensitive. All handrails shall be graspable and contain a return at the ends of the handrail.

Replacement Standard: Minimum Useful Life: 15 Years

Exterior Hardware

Replacement Standard

Every dwelling unit will have a mailbox, or mail slot, and minimum 3" high.

Concrete, Steps and Landings

Repair Standard

Steps, stairways, and porch decks will be structurally sound, reasonably level, with smooth and even surfaces with no slip, trip or fall issues.

III. FOUNDATION CRITERIA

Foundations

Repair Standard

Foundations will be sound, reasonably level, and free from movement and subject to an engineering review if determined by DHCD/MF

Replacement Standard:

Must meet state and local building code.

Stability

The foundation must be structurally sound, not sinking and the top of foundation at base of structure must not be significantly out of level.

The foundation, according to ERA, may be constructed of concrete block, stone, piers or solid concrete. For one story residential properties, the foundation must be at least eight (8) inches wide and 36 inches deep on a footing of 18 inches wide and eight inches deep. For two story residential properties, the foundation must be twelve inches wide and 36 inches deep on a footing of 24 inches wide by eight inches deep.

Reconstruction of foundations must adhere to the city/county's foundation design code including the installation of rebar. Lack of stability beyond a reasonable level that would create an unsafe condition will preclude rehabilitation being undertaken. The type of foundation construction may vary (i.e. brick, solid concrete, stone, concrete block or piers) for geographic regions throughout the State but all must be structurally sound and meet the State and Local Building Codes.

Collapsed Sections

Collapsed sections of foundations must be reconstructed as prescribed by city/county code or a stamped engineer's blueprint. Consideration should be given to the degree to which the remaining foundation meets minimum standards.

Cracks

Inspectors should evaluate foundations to identify cracks, particularly at window areas. All cracks must be filled with appropriate materials. All cracks with more than a 1/4 inch spread should be investigated by a licensed engineer and have an appropriate treatment applied.

Foundation, Vent

All foundations with a crawl space must be adequately vented to meet code requirements. Foundation vents must be screened, louvered and operational. Flood vents are required for properties located in FEMA designated flood zones

Spalling Foundation

Spalling refers to the condition exemplified by crumbling gravel or rock, decaying concrete, collapse of foundations in sections that do not expose dirt on the outside, etc. When these conditions exist, foundations must be treated with epoxy and concrete mixtures that will correct major deficiencies.

IV. STRUCTURAL INTEGRITY CRITERIA

Defined

Structural Integrity means that the foundation, roof, walls and floor system must not show any signs of movement, deterioration, rot and/or damage. The foundation shall be intact without any signs of leaning, sagging and/or bouncing. Shell and foundation shall be of standard construction and be covered by geographically appropriate material.

Bearing Walls

Bearing walls in a structure should be identified and inspected for proper construction. When not present in basements, new walls, support beams and/or jacks must be installed to maintain the integrity of the structure. No bearing walls may be removed when undertaking rehabilitation unless appropriate construction support procedures are applied and installed to permit a safe working environment and compensate for the structural removal.

Existing Additions

All additions to residential structures must be permitted, be on a properly constructed foundation and must not evidence separation from the original structure. When structure separation exists, the inspector may determine that rehabilitation cannot be undertaken.

Structural Walls

Repair Standard

Structural framing and masonry shall be free from visible deterioration, rot, or termite/insect damage and be adequately sized for current loads. Prior to rehab, all sagging floor joists or rafters will be visually inspected to determine if they should be replaced or sistered. Significant structural damage and its cause must be identified and corrected.

Replacement Standard

Newly constructed structural walls must meet State and Local building code.

Firewalls

Repair Standard

Party walls shall be maintained without cracks and plaster deterioration and covered with 5/8 inch type X gypsum, glued and screwed to studs to sustain a two burn hour rate.

Replacement Standard: Minimum Useful Life: 10 Years

V. BUILDING ENVELOPE CRITERIA

Siding Material

All siding must be weather tight and in good condition. If the siding has a remaining useful life of less than 5 years it should be rehabbed or replaced with like materials wherever possible and be approved by the State Historic Preservation Office.

Existing asbestos siding is not inappropriate as a siding material unless it has become broken, detached or is exposing the insulation fabric to the weather. When possible, asbestos siding should be repaired.

Asphalt siding is considered to be an inappropriate material by the Fire Department. It may be covered by a fire retardant siding material when rehabilitation is undertaken. Only older deteriorating asphalt material will be considered for such treatment.

Paneling, untreated plywood, sheetrock and other materials that do not hold up to the weather are deemed inappropriate and must be removed.

All siding must be installed in accordance with manufacturer's recommendations. The Construction Specialist should also specify if the installation of any air sealing or weatherization is required.

Painting and Exterior Walls

While chipping, cracking and deteriorating paint is not a structural problem, the local city or county's rehabilitation effort requires these conditions be corrected. If the structure was built prior to 1978, particularly when there are children residing in the house, the local city or county may require that a lead-based paint analysis be conducted. Any lead-based paint hazard reduction work may only be performed by qualified workers that meet all EPA, MDE and RRP requirements,

Historic Considerations

All structures in historic districts or those with architectural features that exemplify unique architectural characteristics must be given special consideration. The State Historic Preservation Office shall be involved in making specific decisions affecting these projects.

VI. ROOFING CRITERIA

Roofing Specifications

Remove and dispose of all existing roof material and defective sheathing. Replacing defective sheathing should be done at no extra charge up to 5 sf of sheathing per 100 sf of roof using pine board or CDX plywood of matching thickness.

Cut a 1" wide vent at ridge board. Install new Cobra Vent, preformed aluminum drip edge, and vent pipe boots. Replace all flashing. Valleys shall have ice and water shields; staple 15 lb. felt and install 220 lb. fiberglass asphalt shingles with a 30 year warranty. Install shingles over ridge vent. No roof shall exceed two layers of asphalt shingles.

Trusses and Supports

Install pitched, gable end roof using engineered 2'x4' trusses 24" on center, 1/2" CDX plywood sheathing and owner's choice of 220 lb. (30 yr.) fiberglass asphalt shingles over 15 lb. felt. Extend the chimney and plumbing vents, through a 1/2" plywood roofing deck.

Unless otherwise specified, all material shall match existing as closely as possible for material, style, color and method of installation. Seal all edges. Flash and caulk all adjoining surfaces and make weather tight. Replace all flashing, roofing accessories and nails using rust-resistant material. Install all roofs in one continuous operation. House contents must be protected at all times from exposure to the weather and other elements.

Slope Requirements

Minimum roof pitch shall be four inch to one foot rise. Roof areas not having minimum slope should be considered for reconstruction. Reconstruction should occur whenever the

reconstruction area is wider than nine feet on sloped side and leaking cannot be prevented by installing rolled roof or rubberized roofing membrane. Installation shall be to code and manufacturer's recommendations.

Pitched Roofs

Repair Standard

Missing and leaking shingles and flashing shall be repaired on otherwise functional roofs. Slate roofs shall be repaired when at all possible.

Replacement Standard: Minimum Life: 25 Years

Fiberglass asphalt, three-tab, weighing at least 220 and up to 240 lbs. with a pro-rated 25 year warranty with continuous ridge vent stopping one foot from both ends. Energy-Star rated wherever feasible.

Flat and Low Slope Roofing

Repair Standard

If a roof does not have a useful life of 5 years built-up roofing, flashing and accessories shall be repaired if a 10-year leak free warranty is available from a certified roofing company.

Replacement Standard: Minimum Useful Life: 10Years

Fully adhered EPDM over 1/2 inch insulation board. Or Install a 3-ply built-up fiberglass roof of one coated glass base sheet and two plies of Type IV fiberglass, hot mopped. Install gravel stop, flashing and vent collars with .019 aluminum. Flood coat & embed aggregate. Or Install 90 lb. mineralized fiberglass roll roofing using a 4" minimum overlap, nailed 6" on center with asphalt roofing cement per manufacturer's specs. Replace all flashing with .019 aluminum. Dispose of all debris from roof and yard. Provide a 10 year warranty.

Fascia and Soffit Board

Fascia shall be 2x6 dimensional lumber wrapped with pre-bent vinyl clad aluminum fascia. Replace soffit damaged, worn and/or aged soffit material. Install vented vinyl soffit that stimulates beaded T&G soffit material. Include all trim accessories.

Chimneys

Install brick chimney, on the original footing, including one 8"x 8" terra cotta flue liner and cement wash at top. Install or replace chimney cap with a 2' x 2' metal or precast concrete cap cemented in place.

Repair Standard

Unsound chimneys shall be repaired or removed. When chimneys are to be used to combustion ventilation, they shall be relined.

Repair chimney above roof area by cutting out mortar at least ½", removing all loose material and repointing using Portland cement mortar or equivalent. Saturate joints with water before applying mortar. Match color as closely as possible. Replace all missing defective materials with matching materials. Clean mortar and other debris from adjoining surfaces and gutter.

Replacement Standard: Minimum Life: 20 Years

Fireplace flues may not be reconstructed in this program. Replacement furnace flues shall be metal double- or triple-walled as recommended by the furnace manufacturer.

Gutter/Downspout

Gutters and downspouts must be in good condition. Gutters and downspouts are to be installed to direct storm water away from residence. All standard gutters to be .027 gauge thicknesses, 5 inch "K" style, seamless. Downspouts and elbows are to match gutters and be properly fastened with preformed straps and pop rivets. Property angled concrete splash blocks or extensions are to be installed at the end of each downspout. Install downspouts at each corner and major offset with stamps 3' on center. Gutter guards are not permitted unless the residence is located in an extensively wooded setting and the owner is not physically capable of maintaining the gutters.

VII. INTERIOR COMPONENT CRITERIA

Interior Standards Lead-Containing Components

Repair Standard

Particular attention must be considered in dwelling units built in and before 1978. Deteriorated lead-based paint on walls, trim, doors, and cabinets must be stabilized using lead-safe work practices. A liquid encapsulant can be applied on components when the surface is deemed suitable for such coatings, otherwise, other encapsulate methods may be used.

Replacement Standard

When funding is sufficient, lead-containing walls, trim, doors and cabinets identified during a lead-paint inspection can be replaced or enclosed as appropriate.

Flooring

Repair Standard

Bathroom and kitchen floors shall be rendered smooth and cleanable using polyurethane or by being covered with water-resistant vinyl flooring or ceramic tile. Damaged wood floors may be repaired. Basement floors shall be continuous concrete.

Replacement Standard: Minimum Life: 6 Years

Baths shall receive vinyl sheet goods over plywood underlayment. Kitchens shall be vinyl composition tile or ceramic tile over plywood underlayment. New basement slabs shall be at least 3 ½" thick with reinforcement in the upper 1/3 of slab. Area within foundation walls shall have all vegetation and top soil removed, 4 inch base of clean sand, gravel, crushed stone and/or crushed blast-furnace slag. 1 exception; 6-mil vapor barrier.

Closets

Repair Standard

All bedrooms shall have closets with a door, clothes rod, and shelf.

Replacement Standard: Minimum Life: 15 Years

All bedrooms shall have a minimum of one 4' long by 2' wide closet with bi-fold door and wire shelf.

Interior Walls and Ceilings

Repair Standard

All holes and cracks shall be repaired to create a continuous flat surface and any deteriorating paint should be stabilized using lead-safe measures. Minimum height for habitable rooms is 7' 6".

Replacement Standard: Minimum Life: 10 Years

Walls shall be plumb, ceiling level with a smooth finish on at least ½ inch gypsum and/or plaster.

Additional Reference: American Gypsum Association

Hazardous Materials

Repair Standard

Asbestos, lead paint, and other hazards, when identified, shall be addressed in conformance with applicable local, state, and federal laws. If lead abatement or remediation was part of the project, rehabilitated properties shall be cleaned to pass a lead dust clearance test to the levels prescribed by HUD regulations.

Lead Paint

A lead-based paint analysis should be conducted on houses constructed prior to 1978 that evidence chipping, flaking, cracking and otherwise deteriorating paint. If testing reveals the existence of lead-based paint surfaces, they must be removed or covered as prescribed by HUD Lead-Based Paint regulations.

Fire Barriers

Five-eighth inch Type X sheetrock is required under joist in garages that have a living area above them and on walls in garages adjoining living quarters. Five-eighth inch Type X sheetrock is also required when another structure is within five feet of the wall being reconstructed as part of the rehabilitation activity. No cardboard materials, paper materials, tar paper, or exterior insulation materials, such as fiber board, will be permitted in any walls.

Damaged Interior Walls

Holes in sheetrock must be repaired and precautions taken to prevent future damage by installation of door stops and other necessary measures. Water damaged sheetrock must be removed, replaced, and inspected to determine the cause that generated the problem. In bathrooms, water proof green rock, blue rock or other similar drywall material must be utilized. Interior walls with decayed sheetrock must be repaired by installing new sheetrock, taping cracks, texturing and repainting.

Ceilings

All cracked or deteriorating ceilings require an inspection to determine the cause that generated the problem. Every effort should be made to correct the problem before the ceiling is repaired. Cracks must be filled and retextured and the ceiling completely repainted when treated.

Bath and Shower Areas

When there is decaying ceramic wall tile or plastic tile in bath or shower areas, the deteriorated area must be removed. Water proof sheetrock must be installed and old or new tile reinstalled, grouted, sealed and edges caulked.

Stairwell

Stairs shall have no slip/trip hazards.

All stairways must have handrails on one side of stairwell, 34 to 36" from top of nosing and handrail grip shall be at least 1 ½ inches in width

VIII. KITCHEN FACILITIES CRITERIA

Minimum Cabinet Requirements

All kitchens must have sufficient base cabinets to house a kitchen sink and provide sufficient usable counter-top area and upper cabinets to optimize kitchen storage areas, but within reasonable limits controlled by costs. When a cabinet's level of wear makes it unsanitary or nonfunctional, it should be replaced. All replacement cabinets must be of mid- grade quality.

Counter Tops

All counter tops showing evidence of wear, water damage, uplifting of surface material, etc. must be replaced. New counter tops shall be laminate Formica type material and shall include back splash, finished ends or approved equal functionality.

Faucets

All kitchen plumbing must be inspected to ensure that faucets and drain pipes work properly. When new counter tops require sink removal, new sinks and faucets must be provided if they show wear. All new sinks must be vented as prescribed by the Uniform Plumbing Code (UPC).

Flooring

Worn flooring with uplifted tiles, missing tiles, and uplifted cracked areas, etc., require that new flooring be installed. Worn carpeting may not show trip/fall possibility. The use of replacement with indoor/outdoor carpeting is discouraged due to sanitation and safety considerations. These conditions can be addressed by installing vinyl or laminate floor covering when the owner agrees to the treatment.

Lighting and Electrical

GFI outlet receptacles will be installed as required to meet local code. Minimum lighting in kitchen will consist of one lighting fixture in the kitchen cooking area and one lighting fixture in an adjoining eating/dining area, if the lighting is inadequate. The use of fluorescent lighting is an acceptable alternative.

IX. BATHROOM CRITERIA

Minimum Requirements

The minimum standard in a residential structure is as follows: One functional toilet, lavatory, towel rack, ring or hook and either a shower or a bathtub. Any additional baths in a house, at minimum, must contain a toilet, towel rack, ring or hook and a sink.

Sinks

All faucets must have sufficiently accessible hot and cold water levers and must be in good functioning condition. The sink must have a proper drain with P-trap and be vented to the outside as prescribed by the Uniform Plumbing Code. A shut-off valve at the water line connection is required when replacements are made.

Ventilation

All bathrooms must have an operational window or a functional electric exhaust vent fan vented to the exterior.

Doors

All bathroom doors must be functional.

Flooring

Existing bathroom flooring must be inspected at the base of the toilets to ensure that leaking is not occurring. When leaking has occurred and sub floor has rotted, the sub floor must be removed and replaced by 3/4" plywood. Whenever a toilet is removed or installed for any purpose, new toilet wax-ring gaskets must be used. Flooring material that permits water to seep into the sub floor is unacceptable.

Bathroom Lighting

All bathrooms must have at least one light that can be switched from the inside. Lights switched from the outside generally do not need to be relocated, unless the room is being rewired. Any electrical outlet installed or upgraded must be GFI outlet receptacles and installed as required to meet local code

X. BEDROOM CRITERIA

Closets

All bedrooms must have access to closets for storage or clothing. On existing housing, closets in adjoining hall areas are acceptable.

Lighting

All bedrooms must have one switchable light fixture, preferably in the interior of the bedroom next to the entrance.

Outlets

Use of extension cords is discouraged and additional outlets should be provided whenever possible to avoid their use. Any new bedroom receptacle circuits shall have ARC protection circuit interruption protection with receptacles located according to building code requirements.

XI. GENERAL ELECTRICAL CRITERIA

Electrician shall inspect all exposed wiring, motors, fixtures and devices for malfunction, shorts, defects, and adhere to local housing code compliance. Non-functioning and dangerous equipment shall be replaced with new energy star rated equipment, wiring shall be replaced with appropriately sized romex wire, outlets, devices and fixtures shall be energy star rated, if applicable.

Electric Service

Repair Standard

Main distribution panels shall be adequate to safely supply power to all existing and proposed electrical devices and meet NEC and local codes.

Replacement Standard

If electrical demand requires a heavy-up. The new service panel shall conform to the Current NEC and local code. Upgrades shall be 200 amp, main disconnect, 110/220 volt, 32 circuit panel board, meter socket, weather head, service cable and ground rod and cable. Seal exterior service penetration.

Knob and Tube Wiring

Knob and tube wiring in attics is not acceptable when insulation covers the wires. This type of wiring needs to expel heat through the insulation and is considered to be a potential fire hazard when covered by insulation. Knob and tube wiring in attics must be replaced with romex whenever insulation is to be undertaken. Knob and tube wiring may be left intact in walls where insulation is not to be accomplished.

Ground Faults

Ground fault electrical outlets must meet local code and NEC code.

Alarms

Smoke Detector: Install a UL approved ceiling mounted fire and smoke detector interconnect and permanently wire into a receptacle box or provide a lithium battery operated fire and smoke detector on all floors to code

Carbon Monoxide Detector: While all dwellings should have a carbon monoxide detector, any dwelling heated by fossil fuel must have one.

Safety Considerations

No hanging wires are permitted. All light fixtures should be inspected to ensure that they are solidly hung and that the electrical connections have not been loosened. All electrical fixtures that evidence wear must be replaced with new fixtures. All electrical outlets and switches must have cover plates. Any switches or outlets which are non-functional must be inspected by a licensed electrician and be repaired or terminated. Provide light switches to basement areas, particularly when there is an open staircase. Exterior lighting shall be weather proofed

Exterior Electric

Repair Standard

All entrances will be well lighted and either switched at the interior side of the door, or the light will be controlled by a photoelectric cell. Motion activated security lighting will be installed at the rear and sides of properties where indicated to increase safety. All dwelling units will have at least one exterior, GFCI protected, electrical receptacle.

Replacement Standard: NA

Interior Electric Distribution

Repair Standard

Exposed knob and tube shall be replaced. Every room will have a minimum of two duplex receptacles, placed on separate walls and one light fixture or receptacle switched At each room entrance. Receptacles will be grounded where the source wiring circuit is accessible (i.e. first floor above basements, in gutted rooms, etc.). All switch, receptacle, and junction boxes shall have appropriate cover plates. Wiring shall be free from hazard and all circuits shall be properly protected at the panel. Floor receptacles shall be removed and a metal cover plate installed.

Replacement Standard: Minimum Life: 15 Years

When wall finishes are removed, the room shall be rewired to the latest version of the National Electric Code (NEC).

Ground Fault and Arch Fault Circuits

Basement and kitchen receptacles within 6 feet of a sink, all bath receptacles and at least one exterior receptacle shall be protected by a GFCI.

Kitchen Electric Distribution

Permanently installed stoves, refrigerators, freezers, dishwashers and disposals, washers and dryers shall have separate circuits sized to NEC. Two separate alternating 20-amp counter circuits are required with each kitchen area.

Stairwell Lighting

All common halls and stairways between living space must be well lighted with a fixture controlled by 3 way switches at both ends of the hall or stairway.

XII. GENERAL PLUMBING CRITERIA

Plumbing System Water Supply

All fixtures must supply a flow rate of 3-gallons per minute.
All inoperable or leaky main shut off valves shall be replaced. Lead pipe and exposed galvanized pipe shall be replaced with copper pipe or PVCP pipes.

Drain, Waste, Vent Lines

Waste and vent lines must function without losing the trap seal. When replacement is required, lines shall be installed in accordance with the most recently approved mechanical codes.

Plumbing Minimum Equipment

Every dwelling unit shall have a minimum of one single bowl sink with hot and cold running water in the kitchen and at least one bathroom containing a toilet, a vanity with sink and a shower/tub unit, both with hot and cold running water.

Additional References: Local housing code.

Plumbing Fixtures

Repair Standard

All fixtures and faucets shall have all working components.

Replacement Standard: Minimum Life: 20 Years

Single lever, metal faucets and shower diverters with 15-year drip-free warranty. Ceramic toilets, double bowl stainless steel sinks, fiberglass tub surrounds and 5' fiberglass or steel enameled tubs.

Water Heaters

Repair Standard

Each dwelling unit shall have a hot water heater. The minimum capacity for units with two bedrooms or less shall be 30 gallons; larger units shall have a minimum capacity of 40 gallons. Insulation jackets shall be present unless manufacturer provided an internal insulation blanket. Water heaters shall have pressure relief valves with drip legs that extend to within one foot of the floor. Expansion tanks will be included with the installation of new water heaters.

Replacement Standard: Minimum Life: 8 Years

High efficiency, energy star rated water heaters with at least R-7 insulation and an 8-year replacement warranty, or combination with the same minimum capacity as noted above.

Type of Pipe

Unless otherwise specified, all materials shall be copper or PVC. All items shall operate without leakage, noise, vibration or hammering. All penetration of building components shall be neat, sleeved and fire stopped. No solder containing lead shall be used in any pipe or fixture. Damage to structural members from drilling or notching shall be repaired to the acceptance of the owner, Agency and to code. Plumbing must be done in accordance with the Uniform Plumbing code.

Venting

The Uniform Plumbing Code requires that all drains be vented. All drains that are changed as a result of replacing or installing fixtures must be vented in accordance with the Uniform Plumbing Code.

Faucets

If newly installed replaced faucets should be mid-grade lever handle faucets of chrome or white ceramic.

The color and type are to be selected by the owner from stock samples

Functional Sewer Lines

Each residential property must have its own functional sewer line. All houses with problems with sewage backup must be investigated and repairs made to the sewer line.

The new water line shall be laid without joints from meter hub to main shut off valve inside structure. The utility trench is to be filled and mounded in anticipation of future earth settlement and the contractor is responsible for any required regrading within the one year warranty period. All galvanized lines should be replaced.

Shut-off Valves

All fixtures which are removed and replaced require the installation of shut-off valves.

Vent Stacks

All vent stacks must be at least one foot above the roof and appropriately sealed to prevent infiltration of water.

XIII. BUILDING WATER TIGHTNESS CRITERIA

Windows

Windows are not to be replaced unless they are inoperable and are permitting the infiltration of air, snow or rain. Any replacement or treatment of windows must meet the MHT requirements and any Historic Requirements of the local jurisdiction. Rotted sills and trim may be replaced or covered to eliminate decay or to cover lead-based paint. All windows should have locking devices for security. If new windows are required they must be Energy Star rated. All operable windows must have screens.

Repair Standard

All single glazed windows shall be replaced with Energy-Star rated Double-glazed windows. Windows shall have a locking device and mechanism to remain partially open.

Dilapidated lead-containing windows should be replaced. All habitable rooms shall have a window for egress.

Replacement Standard: Minimum Life: 20 Years

Energy Star Rated Double-glazed, double or single hung. PVC, low E, one over one, with historically sensitive snap-in grids and a minimum for your region. All new construction windows shall meet 5.7sf net clear opening.

Basement, Egress

Any basement bedroom must have a code compliant window or door egress system.

Door

When door jambs are still in good condition or the doors are of unusual sizes, solid core wood, prefinished or unfinished doors will be provided. All exterior doors should be provided with locking hardware.

Exterior Doors

Repair Standard

Doors shall be solid, weather stripped, operate smoothly, and include a peep site, a dead bolt, and an entrance lock set.

Replacement Standard: Minimum Life: 10 Years

All replacement doors at the front of the property will be historically sensitive and Energy-Star rated. Steel six- panel doors may be installed at entrances not visible from the front street. Dead-bolt locks will be installed on all doors. All exterior entrance doors shall be minimum size of 32x80. Landings in front of exterior doors shall be minimum depth of 36”.

Interior Doors/Placement

Repair Standard

All bedrooms, baths and closets shall have operating doors.

Replacement Standard: Minimum Life: 10 Years

Hollow core, pressed wood product with brass plated bedroom lockset.

Wall Insulation:

When the framing is exposed during rehabilitation, insulation must be installed with a minimum value of R-13. Insulation installed for newly constructed homes shall be R-21

Insulation

Repair Standard NA

Replacement Standard: Minimum Life: 15 Years

Attic areas and crawl space will be insulated. Attic insulation shall be R-49, and for crawl spaces R-19. Frame walls will be insulated with R-13 fiberglass batts if the wall finish is removed, and with high density cellulose otherwise. 6 mil Plastic vapor barriers will be placed over bare soil in crawl spaces. Crawl space shall have vents unless crawl space is condition. If crawl space is condition, must have sump-pump.

Attic Ventilation

Repair Standard NA

Replacement Standard: Minimum life: 20 Years

Attics will be ventilated with a minimum of 1 square foot of free vent for each 300 square feet of roof area.

Kitchen Ventilation

Range hoods or exhaust fans shall be exterior ducted. Where it is possible

Bath Ventilation

Repair Standard NA

Replacement Standard: Minimum Life: 5 Years

Exterior ducted 70 CFM. 20 some with separate switch in all full baths.

Basement/Crawl Space Insulation

Floor joist shall be insulated with a minimum value of R19 and crawl spaces shall have a vapor barrier of 6 mil plastic. Exception shall be determined on the age of the home and dimensional lumber used in that era.

Roof Insulation: All ceilings under attics or roofs must be insulated with a minimum value of R-49.

XIV. HVAC

Heating Plant

Repair Standard

Inoperative, hazardous or inefficient (less than 75% AFUE) heating plants shall be repaired and altered to perform at least 85% efficiency, where feasible. Programmable thermostats are required.

Replacement Standard: Minimum Life: 20 Years

Gas- and oil-fired plants shall be Energy-Star rated. Heat pumps shall be rated at 16 SEER or better. Programmable thermostats are required. Replacement heating equipment shall be properly sized in accordance with the ACCA's Manual J or other recognized methodology. Data for heat load/loss calculations shall be based on post-rehabilitation conditions.

Distribution System

Repair Standard

Energy Star rated Heat-pump (or equal) integrated HVAC system heating unit capable of heating interior to 78 degrees F when exterior temperature is 0 degrees F in all habitable and essential rooms. To include all vents, vent covers, returns, ducts, and concrete (or comparable) pad for exterior condenser/heat exchanger, electrical and plumbing connections as per code. Programmable thermostats are required.

All ductwork shall be well supported, sealed with mastic and insulated in unconditioned spaces.

Replacement Standard: Minimum Life: 20 Years

XV. DISASTER MITIGATION

Any rehabilitation or replacement of homes will include all necessary local/state and/or federal requirements in order to mitigate any damage that may have occurred as a result of a disaster and as well as addressing any future disaster.

Flood Plain Requirements

When the project is in a flood zone (floodplain): the following surveys will be required.

Check with Dianne re: flood plain requirements for Multifamily

CDA requires the completion of a survey by a registered surveyor for all projects. The survey must include the required information and be accompanied by the appropriate certificates.

The Survey must comply with the ALTA Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys (effective 2/23/2011). Table A must include all items except items 5, 10(b), 15 and 21. A full size copy of the survey must be provided to CDA and its counsel for review and approval prior to execution.

Upon completion of a project that involves adding buildings or other improvements, roads and/or sidewalks, an as-built survey which complies with the above requirements must be provided. CDA at its discretion may require an as-built survey for other types of projects.

The survey needs to include the following items:

- Lot lines and set-back lines
- Location of all existing easements, rights of way, improvements on or encroachments upon, over, to or from the property

- Location of all items that will be listed in Schedule B, Part II of the lender's title policy.

Termite Treatment

Contractor will provide termite treatment including adjacent soil treatment and foundation barrier cap. Treatment shall be done upon foundation completion and prior to main floor construction.

XVI. LEAD BASED PAINT

All properties built prior to 1978 may be subject to a Lead Paint Testing Assessment Report prepared for the property owner by an approved Risk Assessor.

Bidders must be Renovation, Repair and Painting (RRP) Certified by Environmental Protection Agency (EPA) for lead safe work practices for this project or any home built prior to 1978. Prior to work beginning, the contractor shall provide evidence of all required certificates and accreditations.

In addition, prior to starting work, each owner is to be provided a copy of the EPA "Protect Your Family from Lead in Your Home" pamphlet.

All lead-based paint operations are to be performed in accordance with all State, County, City and Federal regulations.

XVII. ENERGY CONSERVATION

All new construction and rehabilitation projects shall be energy efficient and incorporate Green components if possible.

Examples of Green building practices

- Site design
- Building Materials
- Renewable energy
- Water conservation
- Healthy home designs
- Operation and management

WEB SITE REFERENCES:

ENERGY STAR

www.energystar.gov<http://www.energystar.gov/>
<http://www.energystar.gov/>
<http://www.baaqmd.gov/>

Ventilation

www.ashrae.org<http://www.ashrae.org/>
<http://www.ashrae.org/>
<http://www.allianceforwaterefficiency.org/>